

HISTORY OF FOUR CASES  
OF  
ECLAMPSIA NUTANS,  
OR THE  
"SALAAM" CONVULSIONS OF INFANCY,  
WITH  
SUGGESTIONS AS TO ITS ORIGIN AND  
FUTURE TREATMENT.

BY  
WILLIAM NEWNHAM ESQ.,  
FARNHAM, SURREY.

WRITTEN EXPRESSLY FOR THE BRITISH RECORD OF OBSTETRIC  
MEDICINE, &c., EDITED BY  
CHARLES CLAY, M.D., MANCHESTER.

---

MANCHESTER:  
WILLIAM IRWIN, 39, OLDHAM STREET,  
AND 12, LIVERPOOL STREET, LONDON.

3573 1018 201800 30

3573 1018 201800 30

3573 1018 201800 30

3573 1018 201800 30

3573 1018 201800 30



## ESSAY ON ECLAMPSIA.

---

IMPERFECT as is confessedly the following sketch—not only as regards the history of the disorder in question, but still more as affording a plausible rationale of the symptoms, or a hopeful method of cure—still I venture to believe that it is the *most* perfect history that can be obtained of a malady hitherto undescribed, except by a short narrative of the beginning of the case No. 2, which appeared in the *Lancet* of Feb. 13th, 1841, and described that case only during the first twelve months of life; its subsequent history down to the present hour, is only to be found in the following pages.

If the malady has hitherto been almost undescribed, it is quite certain that it is as ill understood, and that, as yet, its treatment has been almost entirely empirical. My hope is, that by placing the following cases in juxta-position, something like a consistent history of the usual commencement, progress, and termination, of this disordered action may be established—that the attention may be awakened to what is confessedly a very rare form of disorder—and that, ultimately, some rational method of relief may be discovered.

That the malady in question must be very important, may be gathered from its terrific results. It will be seen that of the four cases related, two have terminated in idiocy, in the destruction of all the powers and privileges of man—in that living death which is far more painful to friends than the positive extinction of life; that in the third, the same state of impaired intellect had occurred, and would have terminated probably in complete idiocy, had not the life been most mercifully cut short by another malady; and that in only one out of the four cases was cerebral power at all re-adjusted, and that only with great difficulty, and never returning to its pristine vigour. If then the consequences of this disordered condition be so awfully terrific, how important does it become that it should engage our best attention, and secure our most diligent observation.

It is worthy of remark that in all the cases narrated or alluded



to, the little sufferers were in the middle, and, for the most part, in the patrician, ranks of life. I am not prepared to say that this is other than a mere accidental coincidence, or that the disease may not frequently occur amongst the poorer classes and be overlooked, or terminate early in convulsions and the loss of life, in consequence of neglecting to attend to the early symptoms; but at all events, it is a fact on which the attention should rest, and the inquiry should be instituted whether in the more artificial state of society, and the more cultivated brain, and the brain originally formed for *higher action*, but with comparatively less physical force, there may not be causes operating to overturn its integrity, and quench its more brilliant light in the gloomy darkness of idiocy—causes from which the simple and less developed brain may be happily exempt. All-bounteous Nature does very generally compensate the evil of one kind by good of another kind; happiness and misery are very equally distributed, although in different classes of society they may proceed from very dissimilar causes.

The pathognomonic symptom by which this malady is recognised as distinct from all others, is that peculiar bowing forward of the head, and sometimes of the body, which has induced Sir Charles Clarke to denominate this affection “the Salaam” convulsion, by which term it has also been described by the late Mr. West in the *Lancet*, and has been distinguished by Dr. Marshall Hall in a recent work on the nervous system. But it has always appeared to me that this was a very objectionable nomenclature; first, because it is so thoroughly unscientific, and secondly, because it does not, in its primary meaning, convey any idea of disorder at all, much less of that fearfully desolating agency which it operates upon the development and manifestation of mind. The formal bowing of oriental custom and the fearful involuntary nodding of this malady have nothing in common, for the latter action is never even slow; it is rapid—frightfully and fearfully rapid.

To place this malady in the same category with its nearest allies, and to proclaim its connexion with epilepsy, into which it will be noticed that it has a tendency to pass, I would propose to substitute ECLAMPSIA NUTANS for the “Salaam;” and although it may be objected that the derivation of this term is opposed to such application, and that it seems to be equivalent to “*lucus a non lucendo*,” yet since custom and time have sanctioned its application to many forms of epilepsy, it appears to be both just to fact, and in accordance with our present scientific knowledge, to consider

this disorder as a congener with epilepsy, and to define its specific peculiarity by the characteristic *nutans*; at any rate, if not perfect, the latter term is liable to far fewer objections than the unfortunate “Salaam.”

The rarity of this affection is sufficiently shewn by the facts that of those who were consulted on the case No. 1, Sir Charles Clarke had seen but three instances in the course of his practice up to that time—1839; that Dr. Locock had seen but one case previously, and that Sir Astley Cooper had not even seen one; while in the case No. 3, of the many learned persons who had been consulted in this country and on the continent, but one had ever seen a similar affection till he came under the care of Dr. Locock. Subsequently to this period, the cases No. 2 and 4 were presented to Sir Charles Clarke; but even these would form so small a section of infantile disease in his large and long practice, that it must still be considered even by him as a very rare malady. Little is known of the termination of the cases alluded to as having occurred previously to 1839; their final history has either faded from memory or has never been known—with two exceptions, *one* afterwards alluded to in a communication from Dr. Locock as having partially recovered, and one other of Sir Charles Clarke’s, where the *health was recovered, but the patient remained idiotic*.

Of the cases about to be narrated, it is right to state that No. 1 was my own patient from the beginning to the end, and was closely watched by me, especially from the interest attaching to its peculiarity, and from the great affection I felt for the little patient;—that the details of the case No. 2 were furnished by Mrs. West, whose admirable journal now lies before me;—that I am indebted to the kindness of my friend, Dr. Locock, for the sketch of No. 3; and that I am equally obliged to a highly esteemed patient of my own, living in this neighbourhood, for the portrait, drawn from memory, of No. 4—his own dear child.

It may be said, perhaps, by some sceptical persons, that these cases should have been authenticated by names. To this I reply, that my own statement should be a sufficient voucher for their authenticity, and that I cannot envy the feelings, nor approve the judgment, of him who would so trench upon the delicacies of mental constitution as to seek to proclaim to the world sorrows which are most equanimously borne when shrouded by the veil of retiring sympathy.



CASE I.—Miss ———, æt. 16 months. My attention was first called to the state of my little patient on the first of January, 1839; on the previous day, a *heavy and peculiar look about the eyes* had been noticed, and which continued in a greater or less degree throughout the progress of this affection. From the belief that her stomach was the cause of this oppression, she had taken on the previous night, at bed-time, a dose of calomel. Up to this date there had been no observation of any similar state, and the process of dentition had gone on favourably.

On the 1st of January occurred this peculiar nodding of the head, which happened thrice on that day; this bowing rapidly increased till there were several attacks during each twenty-four hours, and *generally two*, of a more aggravated kind, one upon first waking after her night's sleep, and the other upon equally awaking from her morning nap. During these attacks, which consisted in a forcible bowing forward of the body, repeated in rapid succession, seventy, eighty, a hundred, and upon one occasion, a hundred and forty times, she appeared to suffer considerably; other muscles of the body (chiefly flexors) were thrown into involuntary contraction—she became agitated—the pulse was quickened—and she was left languid and disposed to sleep, rather, I believe, from *exhaustion* than from any well-defined epileptic tendency. During these paroxysms, she very constantly raised her left arm to the corresponding side of the head.

About the middle of March, it was observed that she had lost considerable power of the *right arm*, which as well as the *right leg*, became ultimately paralytic. By the middle of April, she had ceased to be able to crawl, or move herself at all; and her countenance showed *cerebral distress*. This, as well as the other symptoms, became gradually aggravated, till the latter end of May, at which time (on the 26th) it was observed that she got off for her morning sleep with difficulty; she awoke several times with violent screaming, and contraction of the whole body, and the usual attack which followed *this morning sleep* came on with great contraction of various and antagonist muscles, the head being first drawn backwards, and then violently bowed down to the feet, which were also drawn up towards the body, so as to contract it into the form of a bow: she then fell again into uneasy slumbers, awaking frequently en sursaut, and with much convulsive action of the flexor muscles, so that the hands and feet were obliged to be sedulously watched.

At this time also, there was sluggishness of the bowels, and a high degree of feverish action, at least, when I saw her about 3 p.m. Although her sleep had been so uneasy, she had taken her dinner, and had been for her customary airing, but had not long been out before the attack which usually followed sleep came on with violent contraction of the whole frame, and on this occasion she nodded one hundred and forty-two times, of which she appeared quite unconscious, and she afterwards dozed for about six hours, awaking at intervals with starting, and being much agitated during her sleep. In the course of the following night she slept little, but on the morning of the 27th she fell into a *deep, heavy*, comatose sleep, which continued for some hours. On the 29th this attack was repeated, but was not so strong, although there was a look of great distress about the countenance: there was also a torpid state of the bowels, but great irritability of the bladder.

From this date, my little patient began to recover: the attacks were entirely suspended till the 21st of June, and the general health was greatly improved. From the 21st of June till the 9th of July, there were again slight bowings of the head, but without contraction of the limbs. On the 9th of July, she, for the first time since April, again *crawled forwards*: she had before this, however, made several awkward attempts to move *backwards*, and she seemed to be gaining power. From the 9th of July, the noddings returned, with the interval of a week, for three successive weeks; and on the 9th of August, 220 days from the commencement, she experienced her last attack, during which she nodded twenty-one times. Very frequently the bowels were acted upon during the attack.

Throughout the whole of this long period, it was manifest that intellectually she had made no progress; and when three years old, though evidently intelligent, yet it was equally clear that the brain had not been well nourished and developed: she was, to say the least, a very backward child, and the manifestations of mind appeared as those of a child *under* two years of age.

At this time, I find in my notes the expression of a belief that the cerebral development would be ultimately good, for she had recovered her health, the paralysis was entirely removed, and she was as lively and active as could be wished, for *a child very much her junior*.

And this prognosis has been realised; she early showed a love of music, which was cultivated, as well as a fondness for pictures; every thing which wealth could procure, or the fondest affection



could devise, was adopted for her benefit; a child younger than herself was selected from the educated class of society to be her entire companion, and the blessing of Heaven has descended, as it always does, upon principled and untiring efforts for the good of the invalid: there has been gradual and steady progress, and although to a watchful friend, acquainted with her history, the traces of this fearfully devastating influence upon the nutrition of the brain are still discernible, yet to one unacquainted with this history she would pass as a very nice, though somewhat backward, and retiring girl. Happily therefore as *this* case has terminated, there is still discoverable the injurious influence upon the intellectual brain, which is so specially marked in the other instances of malady to be hereafter narrated.

The history of the treatment has been purposely reserved to this place, in order that the progress of the one and the other might be exhibited uninterruptedly.

When I first saw my little patient she had taken aperient medicine, and was considerably depressed; on that day, therefore, she was ordered a mixture, with sal volatile. On the third of January, under the impression of the near alliance of the malady to chorea, zinc was prescribed for her, and on the 10th a small blister to the nape of the neck. Since, however, the affection continued and increased, and was certainly novel and inexplicable, it was resolved to consult Dr. Locock, and for this purpose I accompanied the patient to town on the 14th of January. Calomel and Rhubarb every fourth night were prescribed for her, and the carbonate of iron in gradually augmented doses three times a day, to which were *added* on the 22nd some Tincture of Henbane, and Tincture of Castor.

Since, however, no progress had been made, but rather, the symptoms had become aggravated, it was resolved to add Sir Charles Clarke to the consultation, and, on the 11th of February, I again accompanied my patient to town, when it was resolved to continue the calomel and rhubarb, and to give the compound steel mixture.

No marked benefit accruing, and the paralytic state of the right side having become more marked, another consultation with Dr. Locock and Sir Charles Clarke took place on the 28th of March. On this occasion, the calomel and rhubarb were directed to be continued, and the bi-chloride of mercury in doses of one-sixteenth of a grain, to be given three times a day. This plan was continued through April and the greater part of May, when on the 26th



occurred the feverish attack above described, for which small doses of calomel and large ones of James' powder were given at short intervals, with the effect above detailed; and on the 30th of that month, I again went to town with her for the fourth time, and now Sir Astley P. Cooper was added in consultation to Dr. Locock and Sir Charles Clarke. It was then determined to relinquish the bichloride of mercury; to continue the statedly occasional doses of calomel and rhubarb, and to exhibit the compound tincture of aloes in such doses as could be borne, to produce free action of the bowels without exciting diarrhœa.

The result has been above stated; but it is by no means presumed, that this was the consequence of the last mentioned plan of treatment, for it is more than probable that the violent attack of the 26th of May had so modified the morbid action as to enable the conservative powers of nature to lay hold of the simple treatment then ordered, to effect a recovery which had already commenced, in the supersession of the anormal action.

It is surely needless to observe that during the whole course of this malady, the teeth were a constant object of attention, and the gums were frequently and freely lanced.

CASE II.—The following narrative has been compiled, partly from a paper published in the *Lancet*, by the late Mr. West, of Tonbridge Wells, (the father of the child) on the 13th of February, 1841, and partly from a private journal of Mrs. West's, extending from the first symptom of illness to the day in November, 1848, on which the papers were entrusted to my<sup>\*</sup> care. For the facts, the parties most interested are answerable—for their condensation, and juxta-position, and faithful rendering, I alone am responsible.

James Edwin West was born on the 13th of February, 1840, a remarkably fine, healthy child, and continued to thrive till he was four months and a half old. At that time, the first indication of malady, or of anything unusual about him, was a "*strange casting of the eyes towards the ceiling*" for several days, twice or thrice on each day; this was soon after accompanied by a slight starting, which continued for about a week, and was then succeeded "*by sudden bowings of the head, drawing up of the legs, and closing the hands tightly,—sometimes clenching his thumbs, and generally screaming during the attack: he sometimes awoke shrieking, and appeared much frightened.*" These bowings were instantly succeeded by a rapid effort to regain the upright position, and were repeated at intervals of a few seconds, from ten to twenty or more

times at each attack, recurring two or even more times in the day, but continuing not longer than two or three minutes at a time.

When six months old, these symptoms had increased so much in violence, that he had lost all power of voluntary movement, and was even distressed when moved in his bassinet. At this time a neighbouring medical friend was consulted, who advised leeches, the warm bath, lancing the gums, and keeping the bowels very freely open. The general health gradually improved, although the attacks were not less frequent. About seven months he cut the first tooth; but the disorder does not appear to have been increased by the *immediate* irritation of the progress of dentition, nor to have been relieved on the appearance of successive teeth.

He was weaned rather before he was eight months old, without any good effect. He appeared quite indifferent to the severance, and took his food with appetite, *but soon afterwards lost flesh*, and it is now reported of him, "that he has no power to stand, nor can he bear to be moved at all actively; he always *throws his head backward*; his bowels are confined, though previously to the attack they were very regular and healthy."

The plan of treatment pursued was based upon the supposition that the cause of malady was *cerebral irritation* from teething, and therefore leeches, and cold applications to the head, calomel purgatives, and the usual antiphlogistic medicinal and regimenal plans were directed, the gums being frequently lanced, and the warm bath often employed. Notwithstanding a steady perseverance in this plan for three or four weeks, the symptoms became aggravated, and sedatives were then employed, as syrrop of poppy, conium, and opium, but without relief. No diminution of irritation followed upon cutting the four first teeth, although they were cut nearly altogether. After this time he was treated by alteratives and castor oil.

Finding no benefit from any of the former plans, he was shown in consultation to Dr. Locock and Sir Charles Clarke. He was now eight months old, and was directed to have the spine rubbed with a stimulating embrocation, and to take a *mixture containing aloes*. This plan was commenced upon on the 14th of November; symptoms of *cerebral irritation* were noticed about this time, and on the 24th, "*the bowels were much relaxed without medicine, and the excretions were slightly tinged with blood; he had a great deal of fever in the night, followed by sharp twitchings of the muscles, screaming and convulsions. On the following day the bowels con-*



*tinued acting, but he slept all day, never awaking even to take food, and passing no water.'* Next day, the 26th, the bowels continued relaxed, and there was an *inordinate flow of saliva*.

About the 18th to the 22nd of December, the bowels had become rather confined than otherwise, and there were *fewer bowings*.

At the beginning of the year 1841, and about the middle of January, he became the subject of infantile fever, during the continuance of which there were fewer bowings; and on the 19th of that month supervened an attack of *cerebral convulsions*, but no bowings. About this time also, he was *taking syrup of poppy and laudanum*, and the motions were slightly tinged with blood. The convulsions occurred every day, and on the 23rd he is noticed as excessively feverish; "gave eight drops of laudanum, a tea-spoonful of syrup of poppy, and a dessert spoonful of soothing mixture, and still (9 p.m.) almost *always in convulsions* with pain. All the day had a most unnatural movement of the head, rolling it to and fro, and making a strange noise, also turning his eyes and screwing his face up quite in an idiotic manner."

On the 26th he is noticed as "very restless,—*manner unnatural*; rolled his head, and appeared much distressed, with a hoarse cry; slept two hours, and had two fits; never easy but when asleep; cannot bear to be touched or moved. Opium was continued, but without producing the effect of quietude; and from this time to the end of the month the same treatment was pursued, and the same phenomena were present.

At the early part of February is recorded an augmented form of *daily convulsions*, and accompanying these are distinctly noticed also a varying but always considerable *number of bowings*.

On the 11th of February, a trial was commenced of hydrocyanic acid, and this was cautiously persevered with till the 14th of March. During this time he certainly improved; there were many fewer *convulsions*, and these were suspended entirely from the 21st of February; but the bowings increased very materially. From this time the daily journal seems to have been given up, and an occasional report only entered.

On the 24th of April, 1842, he was attacked by influenza, and had a considerable degree of fever, followed on the 26th, at 4 a.m., by a distinct epileptic fit, which returned daily at the same hour till May 1st, when it is noticed that he had had sickness from the commencement of his last attack, and that the head was very hot. Cold lotions to the head, warm baths to the feet, calomel and



lavemens were the treatment now instituted ; but on the 5th he is reported "as very ill indeed ; breathing bad, and rattling in the throat, with almost constant bowings ; high fever, pulse very irregular, apparently dying." A high degree of cerebral irritation was evidently present at this time. The calomel was continued, and there was gradually a diminution of the intensity of the symptoms—in fact, on the 10th, these seemed to have changed from inflammatory action to congestion, since it is reported "that he could bear nursing better, but his head was a dead weight, and he had a bad sort of fit, with winking the eyes, and lolling out of the tongue."

On the 11th he appeared relieved, and was dressed and nursed, but in the after part of the day, he made fifty-six consecutive bowings, which exhausted him, and he fell asleep, but awoke, and had a strong epileptic fit, followed by ten others in the course of the evening and night. *On this day a little water ran out from the left ear.* The frequent recurrence of epileptic fits, bowings, and constipated bowels, with pulmonary congestion on the 22nd and 23rd, formed the characteristic of the remainder of the month, when the journal is again interrupted and was discontinued, "thinking it useless," until March 1st, 1843, and for the remainder of the year.

When three years old, he got up of himself by a chair, and by degrees began to walk. The bowings had diminished gradually, and ceased altogether in this (March) month. His teeth began to decay, *and his gums were in a swollen inflamed state, producing irritation, requiring to be frequently lanced.* In October we left off lancing the gums, the teeth gradually wearing away, (quere from *calomel*?) He frequently put his fingers into his mouth, and drivelled much. About this time he improved greatly, made an effort to speak, held out his arms to be taken up, and could walk firmly and well ; always liked going out of the nursery, and was delighted *with music and gay colours* ; at times he squinted, and rolled his head about.

March, 1844. Has not had a single fit during the last year, is much improved in health, but is unable to express himself by speaking ; has sat at table to dinner, but is unable to feed himself.

In November, 1845, he had a fit, after a very feverish night, otherwise he had considerably improved since the last report.

In January, 1846, he was seized with shivering, followed by fever, and had a strong fit in the morning. He continued feverish the two following days, when he again improved. During this

attack he took repeated doses of calomel, and recovered slowly, with a poor appetite ; and his gums and teeth were in a bad state.

There was a threatening of returning fit in *March*, but it passed off with a dose of calomel, and his health was generally good.

In July, of this year, he became again feverish, and in the evening, having appeared much frightened and agitated for a few minutes previously, he had another very strong fit, and the longest he had ever experienced, but seemed quite recovered the next day. From this time he had violent fits of laughter, and shaking of the head, without apparent cause for the one or the other, and these continued sometimes for more than half an hour.

He was again poorly in October, with symptoms of a fit, had a bad night, screaming more or less all night ; had a large tooth extracted in the morning, and for the five following days was drowsy, not able to sit up, frequently awoke with a shrill shriek, and fell asleep again directly. He was again treated with calomel.

In January, 1847, he is reported as improved in every respect. He was now seen by Mr. Aston Key, who spoke of the future with encouragement, and recommended his being turned adrift among other boys, for the sake of the society of children ; he was therefore sent to a day school. At this time he understood a few things that were said to him, but could not feed himself, nor talk at all.

In March and April he was again poorly, and would hold his forehead, as if in pain ; he was sometimes feverish, and looked ill. Towards the end of April he was better, and went on a visit to a friend, that he might live in a nursery with several children, but, not being happy, he returned home again.

In July, 1847, he was seen by Mr. Watson, from the Deaf and Dumb Asylum, who advised his being placed under the care of a clever woman. He was now able to feed himself out of a spoon, and to drink from a glass ; but he had frequent fits of idiotic laughter, and rollings of the head, which seemed uneasy. He looked pallid, and his appetite was bad.

In 1848, when about eight years and a half old, he was sent to Park House, Highgate, the asylum for idiots, where he has been progressing in health, and is perfectly happy. At the close of 1848, it is stated of him, that when pleased he makes great efforts to speak ; he is a *beautiful boy in form and countenance*, and the medical men visiting the institution consider it as a "hopeful case."

CASE III.————— was little more than one year old at the time the following history was written by his mother, and is now eleven.



“ Came on at four months of age in my presence like a very slight start, once or twice before falling asleep; and very seldom at other times. It was not sufficiently marked to be perceived by any but a very close observer; gave him no inconvenience; his general health was perfect; he sometimes, but not often, awoke crying, as if in a fright.

“ From six to nine months, as winter came on, he was *much worse after sleeping*. In about three or four minutes he would, if lying down, bring his head forwards suddenly and violently towards his knees, turning his eyes up at the same time, and closing his hands. The movement was instantaneous, but occurred sixteen or seventeen times following, at the interval of a few seconds. During this time his breathing was strong and laboured, and he appeared distressed,—sometimes *crying, as if frightened*, after every attack. Though there was no difference in the contraction of the pupils, the eyes appeared to be opened wider than usual, and he would turn his head uneasily on his pillow to the right and left. When it was over, he would yawn as if tired; his colour or natural heat never changed; cold or motion seemed to increase it, and diverting his attention was beneficial. If taken up and held in an erect posture, the head would bow to the knees, and recover itself again immediately. A sudden noise, or any object brought unexpectedly before his eyes would make him throw his head down *once*, at other times. The *violence* of the attack depended very much *on the length of time that he had slept*, and increased proportionably. Though the previous description relates to the worst attacks ever experienced, his general health continued very good, inclined occasionally to be costive, eat and slept well, was never fretful, and was very fond of strong light (fire and candles) and noise, also violent jumping. He *could hold nothing in his hands beyond a few minutes, disliked to have them touched, and moved his arms awkwardly, turning the back outwards*.

“ From nine to eleven months, the same symptoms, but much lighter; seldom accompanied by any oppression of the breath; weaned at eleven months, but did not care for the loss of his nurse; eat four times a day, and had gruel occasionally at night; got much better; did not always experience the bowing on awaking; distress of breath never recurring.

“ He would let his head drop occasionally during the day, *once*, but instead of recovering it instantly, would keep it down a few seconds, and put his hand to the back of his head. His face would



then be flushed, his brow contracted, and the pupils of his eyes almost concealed in the upper part of his eye-balls. When he recovered, his eyes would express astonishment and bewilderment. It was found that gentle friction at the back of the head relieved him immediately; and this last appearance did not continue more than six weeks. It began a fortnight before he was weaned; violent crying, heavy food, or too great heat of room, would at all times increase the symptoms.

“At present (almost fifteen months of age) continues rather better, and does not seem to mind the affection at all. It still comes on after sleeping any time, as well as at irregular periods during the day, though not more than three or four times following; if eating, he continues all the same, and when jumping, even laughs afterwards. He has a rolling motion with his head and eyes; does not always look straight at objects, and takes very little notice in general, though, *when his attention is caught*, does not appear wanting in intelligence. He had no teeth before eleven months, the worst symptoms appearing before they were cut, and commencing with the discontinuance of excessive salivation.”

Dr. Locock writes, “This child, a boy, was a remarkably large child, and at fourteen months old, measured three feet in height. He is much less intelligent and animated than ordinary, and looks deficient in intellect. The great difference in the two cases (Nos. 1 and 3) is, that whereas, in No. 1, the paralytic state affected the whole of one side—arm and leg—in this boy the lower extremities are equally vigorous, but the upper are equally defective, the motions of the arms, and the power over the hands, being much impaired. This child was seen by several medical men at Naples, Florence, and Paris, but only one recognised it, and he had seen only one case previously.”

In the summer of 1840, this child had a severe attack of cerebral oppression and irritation, being analogous with that which happened to No. 1, and for some time afterwards it had no bowing.

From time to time he was occasionally seen by Dr. Locock, who writes of him on the 10th of last November, that he had seen him in the preceding July, that “he is one of the most magnificent looking boys you ever saw, *but an idiot, and almost unable to walk; quite devoid of speech, mind, or the power of expressing his wants.* The peculiar bowing convulsion has ceased for the last three or four years, but he still often suddenly, when standing, drops, as if shot. All the children I have seen with this affection are deficient in

mind. The first case I ever saw of it recovered, and I believe the mind only suffered like little ——, (No. 1) for the time, as if during the illness, no progress had been made; but I suspect little ——'s mind has not yet reached what it ought to have been."

CASE IV.—"My dear Sir: The case of my poor little girl Blanche,\* was, as far as I can now recollect, as follows. When about six months old, and then cutting the two first teeth, I remarked that when dandling her in my arms, her head would fall suddenly forward. She was not by any means a strong child, and when first I remarked the fact, had a bad cold. I pointed out this falling forward of the head to my family, and to the gentleman who was attending as surgeon, and they all declared it was merely the effect of weakness of the muscles of the neck. I was uneasy, however, and watched, and I soon found that these nods, as we called them, were preceded by a sort of internal movement about the epigastric region, and, as far as I could discover, by accelerated action of the heart. No one near, however, had ever seen anything of the kind, and the treatment employed was that of purgatives. For about a year, she got on pretty well in point of development, learned to run about, to speak a few words, and though not quite well, was of a very affectionate disposition. The bowels were always inactive, and the species of convulsions by which she was affected increased in *intensity*, not *progressively*, for sometimes they would cease altogether for weeks. In one instance there was an interval of six weeks. But whenever a new tooth was coming they became very severe. I must remark that dentition was irregular, and the teeth of an unusual form, the front teeth being almost as conical as the canine. The treatment varied according to the views of the different medical men who saw her, sometimes being antispasmodic, and at others almost cathartic. At length, when about two years old, I took her to London, and Mr. Blagden and Sir Charles Clarke saw her in consultation. Sir Charles prescribed steel, I think the citrate; but the effect was to throw her into fainting fits, in one of which we almost thought her dead. We were obliged to abandon the steel, and had recourse to antispasmodics again. But still the convulsions continued, the head suddenly falling forwards, so as sometimes to throw her down, the *hands extended, and the fingers and thumbs wide apart*. During the intervals of total cessation, which occurred from time to time, she made much intellectual

\* Born July, 1841.



progress, but *none* while the convulsions were of daily occurrence—on the contrary, she then went back.

“In the year 1845, after some severely hard work, I resolved to take a holiday for six weeks at Ems, and took all the family with me. This poor child seemed, without being sick, to suffer much *from the sea*; became heated, and very irritable; and on the railroad, though our journeys were short, grew so much worse, that we were obliged to stop some time at Aix la Chapelle, and then quitting the railroad, post on by slow journeys to Bonne, where I knew that my friend Dr. Lever was residing, and I could get good advice. He lanced the gums, which had been very frequently done before, and, by very gentle aperients, brought her round in some degree.

“After our arrival at Ems, considerable tendency to *relaxation* of the bowels showed itself, which was quite contrary to her former state, and this relaxation recurring frequently, was one of the greatest difficulties we had to struggle with, for the appetite was by no means good, and very capricious.

“From Ems we went by very slow journeys to Heidelberg, for the purpose of putting her under the care of the celebrated Professor Chelius, an old friend of mine; and Dr. Lever was kind enough to come up and meet him in consultation. Turpentine, taken internally, was then tried, but without effect on the disease, while it created great irritation. Dr. Chelius then determined to try a plan which he had found succeed exceedingly well in slight effusion of water on the brain. This was by producing a sort of gentle mechanical pressure, by means of bandages of adhesive plaster round the head. Some benefit appeared to take place. I think the attacks were less severe at the end of two months, and the size of the head was decidedly diminished. But the relaxation of the bowels returned, and we were obliged to remove her to Carsruhe, as it was found that the air of Heidelberg agreed with none of us. Dr. Chelius continued to visit, but, unfortunately, during the winter of 1845—1846, she caught cold, and inflammation of the left lung succeeded. At this time she had so far recovered from the attacks of diarrhœa as to be able to run about again quite well, and amuse herself nicely; but after the inflammation of the lung, she never recovered from the subsequent weakness. For change of air we removed her to Baden, where the climate is exceedingly mild. She was there placed under the care of the Grand Duke’s physician, Gugert, with occasional visits from Dr. Chelius. Gugert was not always very open as to his prescriptions, and the remedies



he employed I do not altogether know; but very soon after our arrival at Baden, great hemorrhage took place from the bowels,—apparently the rectum—and when this was stopped, slightly discoloured swellings appeared in the thighs, at the back of the knee, apparently accompanied with very great pain. Great prostration of strength took place, and an indisposition to be moved in the least from one peculiar position, in which the legs seemed to obtain ease. As the weakness increased, the spasmodic nodding ceased; but violent fits of agony seemed to seize the poor little sufferer, who would scream dreadfully, sometimes for half an hour at a time. The appetite gradually failed, diarrhoea returned at frequent intervals, and, after suffering for three months longer, death took place from complete exhaustion. All power of expression had been gone for a considerable time, and intellect seemed at an end; but yet there was perception and affection, for to the very last she knew me, and would do anything when told it was to please me. Thus, half an hour before her death, she sat up in my arms, and tried to eat something at my request, when she had paid no attention to any one else for many hours.

“P.S. I forgot to mention that when there was no diarrhoea, the fœces were often, in the last year, covered with a thick coat of curd-like substance, quite white.”

The above graphic sketch of malady, from the pen of no ordinary observer, is quite sufficient to establish the identity of the malady—to give the history of another remedy uselessly employed, viz., turpentine—to show the inadmissibility of steel—to trace the influence of the disorder in its progress quenching the light of intelligence, and superinducing the thick clouds of mental hebetude, though not perhaps absolute idiocy; and to show its close alliance with the strumous diathesis, exhibited first in that form of *feeble enlarged head* for which pressure was applied, then in the disorder of the digestive organs, then in the peculiar form of inflammation of the lung, then in the usual disturbances of the mesenteric glands, and lastly, in that amount of cerebral irritation and disorganisation which were probably dependent on tubercular formation.

#### REMARKS.

1. This affection appears to be spinal in its *origin*: for although it will have been established by the foregoing cases that previously to the attack there had been some peculiar expression of the eyes, and some degree of heaviness, or of unwonted irritability, yet, as all

the early phenomena are spinal, it must be classed as an eccentric affection; and the little disturbance of the cerebral manifestations may be explained by the reflex irritation of this morbid spinal agency, which has commenced, is proceeding, but has not yet reached that culminating point at which it interferes with the established harmony of the voluntary or semi-voluntary muscles.

2. Though spinal in its origin, it will have been noticed, that in every instance general convulsions will soon make their appearance, and cerebral symptoms will occur.

3. The effect upon the manifestations of mind is most marked; consisting, not in a simple arrest of development, and defective nutrition, for then it would remain just as when the disease supervened, whereas it will have been seen that a desolating influence is at work—a morbid action has been established; and although this shall seem to be at rest for a time, and the mind shall grow during intervals of freedom from the attack, yet on a renewal of the distressing symptoms, it will be seen that the downward action is progressive, that the early sparklings of intelligence are obscured, and that the mischievous influence is proceeding surely, to the extinction of intellect in fully formed idiocy.

4. As far as is yet known, this effect upon the manifestation of mind has been invariable, though not always to the same extent. Of the four cases recorded, one only has recovered, and that not perfectly; and this only under circumstances of such peculiar care, and such unusual advantages, as could not be brought to bear upon the great majority of similar instances. One other case is alluded to as having partially recovered; and one other has been mentioned to me, of a very mild influence, yet apparently of the same character, in which deterioration of the mental action had not overtly taken place. But this occurred in a young lady of seventeen, and I am not acquainted with the details.

5. Not only have the manifestations of mind been blighted, but, in many instances, paralysis has been a consequence, either in the form of hemiplegia or paraplegia; the kind of paralysis, therefore, has not been uniform, though in some form or other, and in a greater or less degree, it has been invariable. Has this arisen from pressure at the base of the brain, or on the medulla oblongata—or has it been the consequence of the exhausted excitability of the spinal system?

6. It is to be remarked that, in each of the recorded cases, the severe attacks of the peculiar bowing have always been preceded



by sleep ; they have been always noticed to occur with especial severity in the morning after the night's sleep, or after the customary morning nap. This invariable sequence must have a cause, and perhaps that cause may exert a more general influence over the malady than would appear at first sight.

7. The condition of the nervous system during sleep is at all times peculiar ; and even under healthful circumstances, there is a tendency to cerebral congestion. The experience of every observer will have proved this ; first, by the influence of a *short* sleep during the day, which invigorates and refreshes, but which, if protracted, leaves the head *heavy*, the intellect beclouded, and the propensity to prolonged sleep unconquerable ; and secondly, by the *natural* awaking from natural sleep, after a night's rest, which, if attended to, results in refreshment of the body, and activity of mind, but which, if passed over, and another hour be devoted to dosing, results only in the aching head, the languid frame, and obnubilated intellect, which are only superseded as the day advances by the stimulus of breakfast, and that preponderance of arterial action which dissipates cerebral congestion.

8. Other causes operate to produce this state in childhood, and since these may for the most part be OBVIATED, they become worthy of primary attention. First, the position of the head during sleep is usually such as to interfere with the freedom of the returning circulation in the neck, and hence congestion of the brain and nervous centres. And secondly, it is not uncommon for children to be placed for their sleep with their heads buried in a feather or down pillow, or enveloped with a cap, or flannel mantle, or almost entirely covered over with bed clothes, all of which tend most admirably and surely to increase the arterial circulation, while, as it has been shown, the venous or returning circulation is impeded. The consequence is too obvious to need explanation : and did it require extraneous support, it will be found in the influence of opium exhibited in case 2.

9. There is evidently in this malady a family alliance with epilepsy, and hence, as has been demonstrated by the foregoing cases, it often passes into epilepsy, or some other form of infantile convulsions. Tetanoid symptoms also do sometimes occur during its progress. This affection is mentioned by Dr. Marshall Hall, who does not, however, appear to have witnessed it, amongst the forms of cerebral malady.

10. It will have been noticed, that the little patients express alarm during the attacks ; they appear as if *frightened*. But this



I conceive is not a symptom essentially attaching to the malady, but rather the expression of undefined apprehension from finding themselves subjected to unusual motions of the body, over which they themselves have not the usual control of volition.

11. In a very large meeting of medical men, at Southampton, in the year 1840, to whom I mentioned the case under my own immediate care, it appeared that not one had ever seen the affection, but it was set down to be dependent upon *dentition*. It is very easy to cut the Gordian knot of difficult inquiry, by ascribing these peculiar phenomena to a well known cause of infantile nervous irritation; and assuredly, the irritation of the trifacial nerve, during the process of dentition, may be considered as a probable cause of the whole malady. But it is to be remarked, that in the case more especially my own, there had been no disturbance from dentition up to sixteen months of age; that no marked relief of the symptoms followed upon freely lancing the gums; that no aggravation of symptoms attended any particular stage of the progress of dentition; and that this process was not completed when the bowing affection finally ceased. On the contrary, in at least two of the other cases, the symptoms were aggravated or alleviated by certain conditions of this great natural travail. Yet in case 2, dentition does not bear a marked influence upon the course of the malady; and in case 4, the principal severity of the symptoms, and injury to the cerebral functions and structures, occurred after the process of the first dentition had been completed. Although, therefore, I would reject the idea of the Eclampsia nutans *originating solely* from dentition, yet I would by no means overlook this as a probably aggravating cause, under circumstances of peculiar excitability of the nervous centres.

12. It would be unfair to overlook irritation of the pneumogastric nerve, in the process of difficult digestion, as a possible cause of this malady, when we know the great susceptibility of the infantile nervous centres, and when we see the ease with which they are disturbed by an overloaded stomach, or by the presence of indigestible food. Nevertheless, although worthy of attention, I do not conceive this to be the essential cause of the malady.

13. In the same category would I place as an unproven cause of this disturbance, the irritation of the spinal nerves from the presence of worms, or other irritating dead matters in the bowels. These are not to be overlooked, but they are not the cause; nor should any of these, or all of them combined, take off our attention from what I verily believe to be the *fons et origo mali*.

14. The influence of atmospherical changes must not be forgotten ; and it must be recollected, that in the case No. 1, the first disturbance came on in the middle of winter. But then it must be recollected, that it continued and increased through the summer : this also was the case with No. 4. In the other cases, the malady did not make its invasion in the winter. In my own case, (No. 1) the patient was shrouded from all undue exposure, and inhabited the most splendid well-warmed and well-ventilated nurseries. In two of the other cases, the same phenomena occurred in Italy, and Germany, and France, as under our own climate of vicissitudes ; so that it may reasonably be inferred, that atmospherical changes have not a material influence on the malady. Nevertheless, the atmosphere may be made subservient to the beneficial treatment.

15. There are some differences in the phenomena described which it would be right to notice.

a. During the paroxysms the hands were closed in Nos. 2 and 3, but they were expanded in No. 4, showing that in the former cases irritation of the flexor muscles—in the latter, of the extensors—was predominant,

b. The throwing of the head backward in No. 2 appears only to have been a consequence of muscular and general feebleness, whence the head, from its own weight, fell backward from the want of adequate support.

c. In No. 2 the irritation of the *decaying teeth* seems to have been the greatest in 1843, when the peculiar bowing affection was relieved ; but in No. 4, the bowings were aggravated when teething irritation was greatest. Was the early decay of the teeth of No. 2 a consequence of the malady, of the peculiar constitution, or of the large quantity of calomel exhibited ?

16. In the case No. 2 is very strongly marked the distinctness of the *bowings* from the cerebral convulsions, and fully formed epileptic paroxysms which occurred in the subsequent history of its progress.

17. We may not altogether pass over the noticed escape of water from the left ear of No. 2. It does not appear to have been in any considerable quantity, and there is not sufficient ground for reasoning upon its origin ; it occurred *after* symptoms of meningeal irritation, and may have been its product ; but it may also have arisen from other and unimportant causes.

18. The fondness for music, and pictures, or gay colours, has been so marked in some of the above detailed cases, that it should



be noticed, as it shows that the injurious impression has not been made upon the organs of sense, and as the judicious employment of these senses would form a most important part of the future educational treatment, because affording large inlets of knowledge, and to the development of sentiment and affection.

19. A few remarks seem necessary upon the treatment hitherto adopted. It is clear from these cases that the principle of prescription has been based upon spinal irritation, as the first link in the chain of morbid actions; and to give calomel doses to keep the secretions in order, and steel, or some other tonic, to sustain the powers of life. But in No. 1 it does not appear to have exerted a beneficial influence; in Nos. 2 and 4 it seems to have been rather injurious. Prussic acid, as a sedative, seems to have palliated the symptoms, but opium to have undoubtedly caused aggravation—to have increased the convulsions—and not to have procured *quietude*. It is easy to see how opium may have aggravated the symptoms, if these be in any measure dependent upon a congested condition of the vessels of the brain. The state of the fontanelles would afford material assistance in determining this question, whether there be a hyperœmic or anœmic condition of the organ. So far as my opportunities for investigation have gone, the cases have all occurred in children whose brains were marked by high action, accompanied by little power.

20. It cannot fail to have been noticed that the injury done to the brain is progressive—that it is not the result of one fearful storm, which commits its ravages and is gone—that in the first instance, the cerebral manifestations are uninjured, but that they are more and more obscured so long as that disorder is continued, of which the peculiar bowing is the first indication and the pathognomonic symptom.

21. Here then arises the question—wherein consists this morbid action? After an attentive watching of my own case, and after a very close investigation of the phenomena attaching to the other cases, my belief is that the essential character of this malady is inflammatory action of a weak or strumous character; that, in all probability, this commences in the membranes investing the medulla oblongata; that it is early extended to the membranes covering the base of the brain; that inflammatory action is succeeded by congestion in the vessels supplying and nourishing the organ itself; that this condition is followed by exudations of lymph or serum, the locality of these effusions being determined by the constitution

and local circumstances ; that, as a consequence of these exudations, paralysis is produced from pressure, its peculiarity being defined by the exact situation of the effusion ; that the regular nutrition of the brain is interrupted, and its manifestations blunted ; and in the more aggravated cases, the organ becomes so deteriorated as to lose all power of carrying on the intellectual functions, it having, in all probability, partaken of the same kind of inflammatory action as first appeared in its investing membranes.

22. With these views, it is obvious that on the occurrence of another similar case, I should not pursue the same plans as formerly, but that the treatment would be based on the indications arising from the preceding statement of opinions with regard to the essential nature of the malady.

23. Setting off with the indications arising from strumous inflammatory action, I should be very cautious not to diminish the powers of life, while I was endeavouring to counteract its morbid tendencies.

24. With regard to direct medical treatment, I should very reluctantly apply leeches ; though if the power of the system and cerebral action would seem to warrant such treatment I would fearlessly employ one or more leeches behind each ear, according to the age of the little patient, and I would repeat this application, according to circumstances, always taking care not to blanch the system of its red blood. I might probably give the tartrate of antimony in full doses, for a short space, but I should not rely long on this powerfully debilitating medicine. I would give small doses of Hyd. cum Cretâ every third evening in combination with Pulv. Jacobi, and Pulv. Ext. Aloes aquosi, exhibiting also the *two latter* every evening in such doses as would keep up free, but not cathartic, action from the bowels, and would at once clear the liver from its oppressions, relieve the brain from congestion, and invigorate the digestive functions. Then I would exhibit, in very moderate doses, the iodide of potassium, with an excess of potass, and combined with sarsaparilla ; and as soon as I felt assured I had only to deal with enfeebled vessels, I would *combine* this plan with steel wine, taking care neither to anticipate nor defer this change beyond the time when careful observation would declare it to be justifiable. I would add to these plans some mode of counter-irritation, and I think the best would be the insertion of a seton, which, if judiciously and carefully managed, might be done without proving a source of great annoyance to the little patient ; and where physical and intellectual life



and health are endangered, one would not mind even some great inconvenience and trouble to save both the one and the other. I have not mentioned cod liver oil, but it might perhaps find its place.

25. Perhaps even more is to be accomplished by attending to the regulation of the circumstances of infantile life than by the direct agency of medicine, though it is my decided conviction that the former without the latter would be unavailing.

26. It would seem that there are certain organs and functions which more especially claim our attention, together with that peculiar process which oftentimes characterizes, and even occasions, infantile malady. I would, therefore, make a few observations on the subject of dentition, and then more especially notice the cautions required by the brain, the stomach, and the skin.

27. Although I have already ventured to question *the origin* of Eclampsia nutans in the process of dentition, yet it is impossible to doubt that it may exert a very injurious influence upon its *progress*. The augmented arterial action in the gums and alveolar processes, and the difficulty with which the *fibrous structure of the membrane immediately investing the tooth is absorbed*, must necessarily give rise to such an amount of local congestion and irritation, reflected upon the nervous centres, that no right-minded person would hesitate to relieve this condition by adequate and repeated lancing of the gums, so as to liberate the teeth from their fibrous investment, and to aid them in making their escape through their more superficial covering. At the same time, so important is it to avoid mental emotion, that this process of scarification should be done as quietly and as delicately as possible, and with the least possible excitement of a mental kind.

28. This observation conducts us at once to the state of the head, and to the great importance of avoiding mental emotion and everything which tends to increase cerebral action. I should not be an advocate for the continued application of much cold to the head, since by so doing venous congestion may be produced to a more mischievous extent than can be remedied by any counter-vailing diminution of arterial action. But if the child could be brought without suffering alarm to be accustomed to the impression of tepid water from a portable shower bath, at first very quietly administered, and by degrees somewhat more impressibly, and from a greater height, I should look upon this as a remedy of great power. Where this cannot be accomplished, I would employ the warm bath every morning, taking the precaution of applying a cold evapora-

ting lotion to the head at the same time. I would not allow a cap to be worn, night or day, on any pretext whatsoever; and I would take care that when asleep, the cool air of the nursery should have free access to the head and nose, always guarding the extremities from cold. I would on no account suffer the little patient to lie on a feather bed or down pillow; and would substitute for the former a horse-hair mattress, and for the latter, a pillow composed of horse-hair lightly shaken into its case. The form of the pillow is not unimportant, for it should not only consist of the material above mentioned, but its depth should be only just such as to fill up the space between the parallel planes of the point of the shoulder and the side of the head. The object of this requirement is that the head should lie naturally, making, by its position, no pressure on the returning vessels, and incurring no risk of the head dropping from the pillow, and falling forward upon the breast. The influence of all excitants of the nervous system should be most sedulously guarded against, since all these lead to that reflex concentric action, which *must tend* to augment inflammatory action or congestion, and to bring on those attacks which, though dependent upon morbid excitability of the disordered structures, yet are liable to be induced, brought into action, and aggravated by external excitants. Hence, as far as possible, the little contrarieties of infancy should be avoided; its little troubles should be soothed; every approach to harshness of manner or of management should be proscribed; discipline and firmness should be so tempered by mildness and affection as to lose their asperities; nothing should be done suddenly or hastily, but the greatest quietude should be observed; emotion of every kind is to be superseded; even a surprise, though it be apparently of a very douce character, should be avoided; the presence of strangers, and the introduction to unacquainted faces had better be avoided; and whatever is really necessary to secure the comfort of the little invalid, which may be disagreeable, must (in the same manner as lancing the gums) be accomplished in the same expeditious, quiet, delicate manner. This principle, of course, extends to all the little passions of early life, and even to the impressions made by sudden noises—and more than all, to those noises, if likely to awaken the little sleeping patient from his slumbers: for then would be combined the emotions of surprise and fearfulness, which would both operate banefully upon the morbid state. There is required in the management of these cases, the watchful eye of an affectionate parent, and the constant care of an



intelligent, firm, kind, and thoroughly self-denying nurse; and particularly for this reason, that although the infant mind is not to be stimulated to action, yet its natural phenomena should be most carefully watched, its development fostered, its lost power noticed and recorded, and its morbid tendencies chronicled; such a rare combination of excellencies were met with in the case No. 1, and to these greatly may be ascribed its happy termination. Before quitting the subject of cerebral management, it should be mentioned that the patient should be always accustomed to *lie down awake* when placed in its bed, either for the night or the morning nap; that in all such cases it should not be previously nursed off to sleep, and that anything *like rocking* should be most rigidly prohibited.

29. We come now to notice the stomach and digestive functions. Irritation here is of great importance, and should claim our especial attention. Care should be taken that the food should always be of a light and easily digestible character, and that its quantity should be regulated by the digestive powers. It is to be remarked that the meals are not to be too frequently nor too distantly given. The stomach is an organ which must have its period of repose as well as of activity; it is invigorated by *exercise*, but exhausted by over-fatigue; its energies are quickened by repose, but enfeebled by too long inaction or fasting, and the only way by which its powers can be retained or improved, is by regularity in the hour of administering its supplies, and proportioning those supplies to the peculiarities of the individual organ. An error is often made on this subject either by the too great frequency or the too great distance of the meals, both of which extremes, as has been shown, occasion feebleness—the first from overtasking power, the last from its exhaustion. And since, in the subjects predisposed to eclampsia nutans, there is a prevailing preponderance of white fluids, it should be remembered that though the quantity and quality of the food must be regulated by the age of the child, yet that it should at all times be nutritious, unstimulating, easy of digestion, and, as far as may be, of a *dry character*. The period of life is one of development, and therefore, diet must be nutritious. But sub-inflammatory action is going on, and therefore the capillary circulation must not be goaded by stimulants; and the stomach is weak, therefore the food must be easy of digestion. The great morbid tendency of the digestive organs is to the prevalence of acidity, therefore ascescent articles of food, sugar, &c., should be avoided, and when

acidity is present, it is best controlled and counteracted first, by antacid aperients, and then by such as will warm and support the energies of the stomach, such as the *vinum aloës*, the *tinct. aloës*, c. or the *decoct. aloës*, c. It need scarcely be said, that the excreting functions must be sedulously watched, and their appropriate indications followed out, securing the effectual performance of the function of defœcation, and that depuration of the blood which can only be effected by preserving the actions of the liver, the skin, and the kidneys. All these organs will require attention, and each demand its particular remedy, yet all harmoniously tending to the one great object of dismissing from the system those inaterials which, by their presence and continuance, may tend to increase morbid action—at all events to extend its ramifications.

30. And this leads me to notice the impression of the air. It is easy to make mistakes upon this subject. The little patient should live in well-ventilated nurseries, but it should be shielded from draughts of air; its power of resisting cold and generating warmth is feeble; the extremities easily become cold, and, by consequence, congestion readily occurs in the cerebral vessels. While, therefore, we secure the point of its having plenty of fresh air in its day and night nursery, this must not be obtained during the cold seasons of late autumn, winter, and early spring, by the admission of the external atmosphere, but of the air of the house which has been previously warmed, so that it may always live in a temperature of 56° to 64° Fahr. If the temperature fall below the *one*, or rise above the other, it will not be comfortable. The patient will be chilly when asleep, or feverish when awake, and both these states should be prevented.

31. With regard to exercise in the open air, the little patient should be well clothed, with plenty of non-conductors of its own temperature. It should then be taken out warm, and freely exposed during a considerable part of the day, when the weather is fine; but it should be most sedulously guarded from atmospherical inclemencies and vicissitudes.

Finally, its amusements should be diversified. It should not be allowed to fret from the want of little objects of interest—but those objects should not be of a boisterous nature; they should all possess a quiet character, and tend to educe imperceptibly the powers of the intellectual, and the energies of the affective faculties.

Farnham, Feb. 22nd, 1849.